



Department
for Environment
Food & Rural Affairs

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Draft Air Quality Plan for the achievement of EU air quality limit value for nitrogen dioxide (NO₂) in Teesside Urban Area (UK0013)

September 2015



Llywodraeth Cymru
Welsh Government



The Scottish
Government
Riaghaltas na h-Alba



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1 Introduction

1.1 This document

This document is the Teesside Urban Area agglomeration zone (UK0013) updated air quality plan for the achievement of the EU air quality limit values for nitrogen dioxide (NO₂). This is an update to the air quality plan published in September 2011 (<http://uk-air.defra.gov.uk/library/no2ten/>).

This plan presents the following information:

- General information regarding the Teesside Urban Area agglomeration zone
- Details of the NO₂ exceedance situation within the Teesside Urban Area agglomeration zone
- Details of local air quality measures that have been implemented, will be implemented or are being considered for implementation in this agglomeration zone.

This air quality plan for the Teesside Urban Area agglomeration zone should be read in conjunction with the separate UK overview document. The UK overview document sets out, amongst other things, the authorities responsible for delivering air quality improvements and the national measures that are applied in some or all UK zones. The measures presented in this plan and the accompanying UK overview document show how the UK will ensure that compliance with the NO₂ limit values is achieved in the shortest possible time.

1.2 Context

Two NO₂ limit values for the protection of human health have been set in the Air Quality Directive (2008/50/EC). These are:

- The annual mean limit value: an annual mean concentration of no more than 40 $\mu\text{g}\text{m}^{-3}$
- The hourly limit value: no more than 18 exceedances of 200 $\mu\text{g}\text{m}^{-3}$ in a calendar year.

The Air Quality Directive stipulates that compliance with the NO₂ limit values will be achieved by 01/01/2010.

1.3 Zone status

The assessment undertaken for the Teesside Urban Area agglomeration zone indicates that the annual limit value was exceeded in 2013 but is likely to be achieved before 2020 through the introduction of measures included in the baseline.

1.4 Plan Structure

General administrative information regarding this agglomeration zone is presented in section 2.

Section 3 then presents the overall picture with respect to NO₂ levels in this agglomeration zone for the 2013 reference year of this air quality plan. This includes declaration of exceedance situations within the agglomeration zone and presentation of a detailed source apportionment for each exceedance situation.

An overview of the measures already taken and to be taken within the agglomeration zone both before and after 2013 is given in section 4.

Baseline modelled projections for 2020, 2025 and 2030 for each exceedance situation are presented in section 5. The baseline projections presented here include, where possible, the impact of measures that have already been taken and measures for which the relevant authority has made a firm commitment to take the measure(s). However, it has not been possible to quantify the impact of all the measures. This section therefore also explains which measures have been quantified, and hence included in the model projections, and which measures have not been quantified.

2 General information about the Zone

2.1 Administrative information

Zone name: Teesside Urban Area

Zone code: UK0013

Type of zone: agglomeration zone

Reference year: 2013

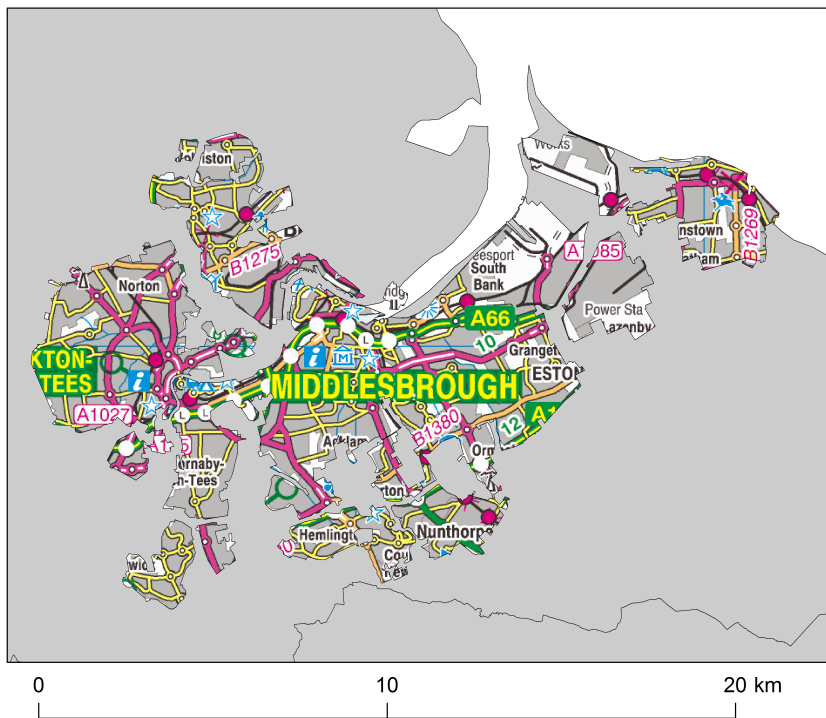
Extent of zone: Figure 1 shows the area covered by the Teesside Urban Area agglomeration zone.

Local Authorities within the zone: Figure 2 shows the location of Local Authorities within the agglomeration zone. A list of these Local Authorities is also given below. The numbers in the list correspond to the numbers in Figure 2.

1. Middlesbrough Borough Council
2. Redcar and Cleveland Borough Council
3. Stockton-on-Tees Borough Council

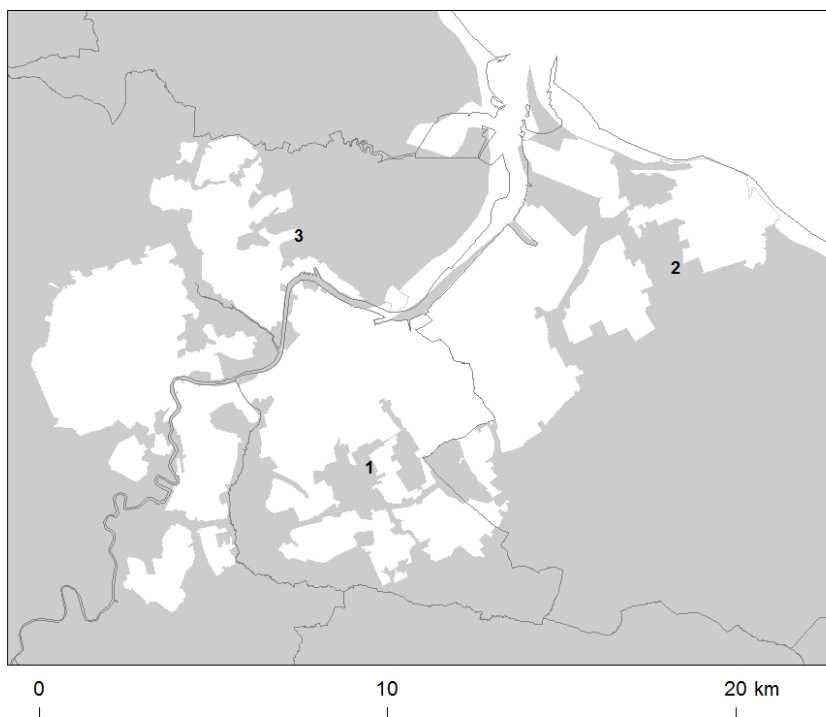
(Note: Local Authority boundaries do not necessarily coincide with zone boundaries. Hence Local Authorities may be listed within more than one zone plan.)

Figure 1: Map showing the extent of the Teesside Urban Area agglomeration zone (UK0013).



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Figure 2: Map showing Local Authorities within the Teesside Urban Area agglomeration zone (UK0013).



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2.2 Assessment details

Measurements

NO₂ measurements in this zone were available in 2013 from the following national network monitoring stations (NO₂ data capture for each station in 2013 shown in brackets):

1. Billingham GB0421A (97%)
2. Middlesbrough GB0583A (98%)

Full details of monitoring stations within the Teesside Urban Area agglomeration zone are available from <http://uk-air.defra.gov.uk/networks/network-info?view=aurm>.

Modelling

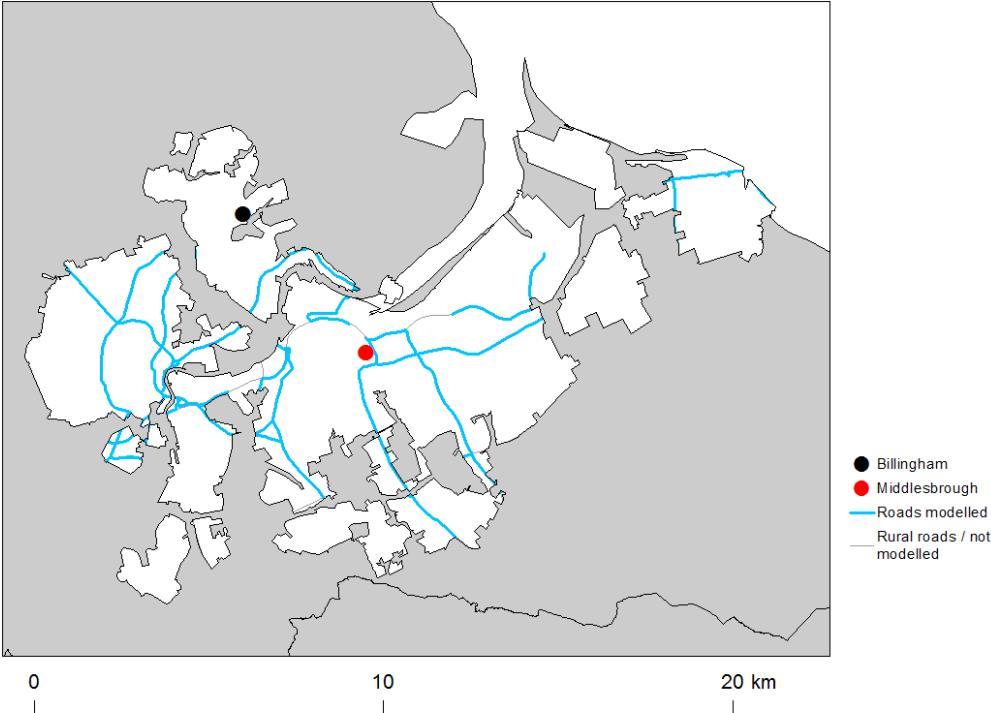
Modelling for the 2013 reference year has been carried out for the whole of the UK. This modelling covers the following extent within this zone:

- Total background area within zone (approx): 119 km²
- Total population within zone (approx): 315,067 people
- Total road length where an assessment of NO₂ concentrations have been made: 69 km in 2013 (and similar lengths in previous years)

Zone maps

Figure 3 presents the location of the NO₂ monitoring stations within this zone for 2013 and the roads for which NO₂ concentrations have been modelled. NO₂ concentrations at background locations have been modelled across the entire zone at a 1 x 1 km² resolution.

Figure 3: Map showing the location of the NO₂ monitoring stations with valid data in 2013 and roads where concentrations have been modelled within the Teesside Urban Area (UK0013) agglomeration zone.



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2.3 Reporting Under European Directives

From 2001 to 2012 the UK has reported annually on air quality concentrations using a standard excel questionnaire (Decision 2004/461/EC). These questionnaires are available online from <http://cdr.eionet.europa.eu/gb/eu/annualair>. Since 2013 reporting has been via an e-reporting system (Decision 2011/850/EU) <http://cdr.eionet.europa.eu/gb/eu/>.

In addition, the UK has reported on air quality plans and programmes (Decision 2004/224/EC) <http://cdr.eionet.europa.eu/gb/eu/aqpp>.

3 Overall Picture for 2013 Reference Year

3.1 Introduction

There are two limit values for the protection of health for NO₂. These are:

- The annual limit value (annual mean concentration of no more than 40 $\mu\text{g}\text{m}^{-3}$)
- The hourly limit value (no more than 18 hourly exceedances of 200 $\mu\text{g}\text{m}^{-3}$ in a calendar year)

Within the Teesside Urban Area agglomeration zone the annual limit value was exceeded in 2013. Hence, one exceedance situation for this zone has been defined, NO₂_UK0013_Annual_1, which covers exceedances of the annual limit value. This exceedance situation is described below.

3.2 Reference year: NO₂_UK0013_Annual_1

The NO₂_UK0013_Annual_1 exceedance situation covers all exceedances of the annual mean limit value in the Teesside Urban Area agglomeration zone in 2013.

Compliance with the annual limit value in this exceedance situation has been assessed using a combination of air quality measurements and modelling. Table 1 presents measured annual concentrations at national network stations in this exceedance situation since the 1st Daughter Directive (1999/30/EC) came into force in 2001. This shows that there were no measured exceedances of the annual limit value in this zone in 2013. Table 2 summarises modelled annual mean NO₂ concentrations in this exceedance situation for the same time period. This table shows that, in 2013, 9.7 km of road length was modelled to exceed the annual limit value. There were no modelled background exceedances of the annual limit value. Maps showing the modelled annual mean NO₂ concentrations for 2013 at background and at roadside locations are presented in Figures 4 and 5 respectively. All modelled exceedances of the annual limit value are coloured orange or red in the maps.

The maximum measured concentration in the zone varies due to changes in emissions and varying meteorology in different years. However, the models are also updated each year to take into account the most up-to-date science, so the modelled results for different years may not be directly comparable.

The modelling carried out for this exceedance situation has also been used to determine the annual mean NO_x source apportionment for all modelled locations. Table 3 presents summary source apportionment information in this exceedance situation.

Table 3 summarises the modelled NO_x source apportionment for the section of road with the highest modelled NO₂ concentration in this exceedance situation in 2013. This is important information because it shows which sources need to be tackled at the location with the largest compliance gap in the exceedance situation. It is

not possible to calculate an unambiguous source apportionment for annual mean NO₂ concentrations for the reasons discussed in the UK Technical Report¹. Therefore no NO₂ source apportionment is provided.

Figure B.1 in Annex B presents the annual mean NO_x source apportionment for each section of road within the NO₂_UK0013_Annual_1 exceedance situation (i.e. the source apportionment for all exceeding roads only) in 2013. Roads have been grouped into motorways, primary roads and trunk roads in this figure.

¹Technical report to be finalised for the final plan.

Table 1: Measured annual mean NO₂ concentrations at national network stations in NO₂_UK0013_Annual_1 for 2001 onwards, μgm^{-3} (a). Data capture shown in brackets.

Site name (EOI code)	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Billingham (GB0421A)	32 (95)	30 (98)	32 (97)	29 (99)	27 (98)	29 (98)	28 (96)	27 (99)	28 (88)	28 (96)	26 (96)	21 (97)	20 (97)
Middlesbrough (GB0583A)	25 (96)	26 (82)	25 (93)	24 (65)	25 (93)	22 (96)	21 (99)	21 (99)	19 (97)	22 (97)	18 (99)	18 (96)	16 (98)
Redcar (GB0977A)	25 (83)	23 (94)	25 (96)	22 (98)	25 (51)	22 (84)	17 (65)						

(a) Annual Mean Limit Value = $40 \mu\text{gm}^{-3}$

Table 2: Annual mean NO₂ model results in NO₂_UK0013_Annual_1 for 2001 onwards.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Road length exceeding (km)	10.2	3.2	34.3	20.6	16.4	15.7	12.2	8.9	10.0	17.2	8.3	8.4	9.7
Background exceeding (km ²)	1	0	0	0	0	0	0	0	0	0	0	0	0
Maximum modelled concentration (μgm^{-3}) (a)	48.8	43.0	79.9	72.1	76.5	74.0	72.3	84.0	75.8	84.0	74	74	65

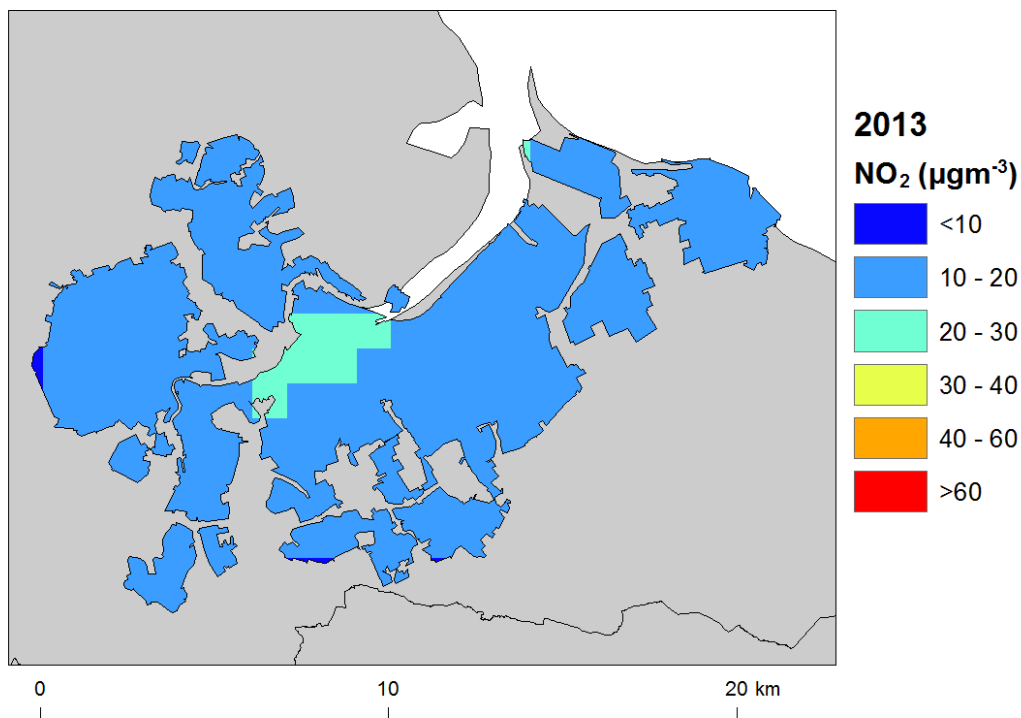
(a) Annual Mean Limit Value = $40 \mu\text{gm}^{-3}$

Table 3: Modelled annual mean NOx source apportionment at the traffic count point with the highest modelled concentration in 2013 in NO2_UK0013_Annual_1 (μgm^{-3}) (traffic count point 58357 on the A66; OS grid (m): 449600, 520600).

Spatial scale	Component	Concentration at highest road link (a)
Regional background sources NOx (i.e. contributions from distant sources of > 30 km from the receptor).	Total	6.2
	From within the UK	3.7
	From transboundary sources (includes shipping and other EU member states)	2.6
Urban background sources NOx (i.e. sources located within 0.3 - 30 km from the receptor).	Total	30.9
	From road traffic sources	20.5
	From industry (including heat and power generation)	4.2
	From agriculture	NA
	From commercial/residential sources	2.1
	From shipping	0.7
	From off road mobile machinery	2.6
	From natural sources	NA
	From transboundary sources	NA
From other urban background sources	0.8	
Local sources NOx (i.e. contributions from sources < 0.3 km from the receptor).	Total	135.9
	From petrol cars	11.8
	From diesel cars	41.0
	From HGV rigid	20.4
	From HGV articulated	34.0
	From buses	6.0
	From petrol LGVs	0.4
	From diesel LGVs	22.2
From motorcycles	0.1	
From London taxis	0.0	
Total NOx (i.e. regional background + urban background + local components)		172.9
Total NO ₂ (i.e. regional background + urban background + local components)		65

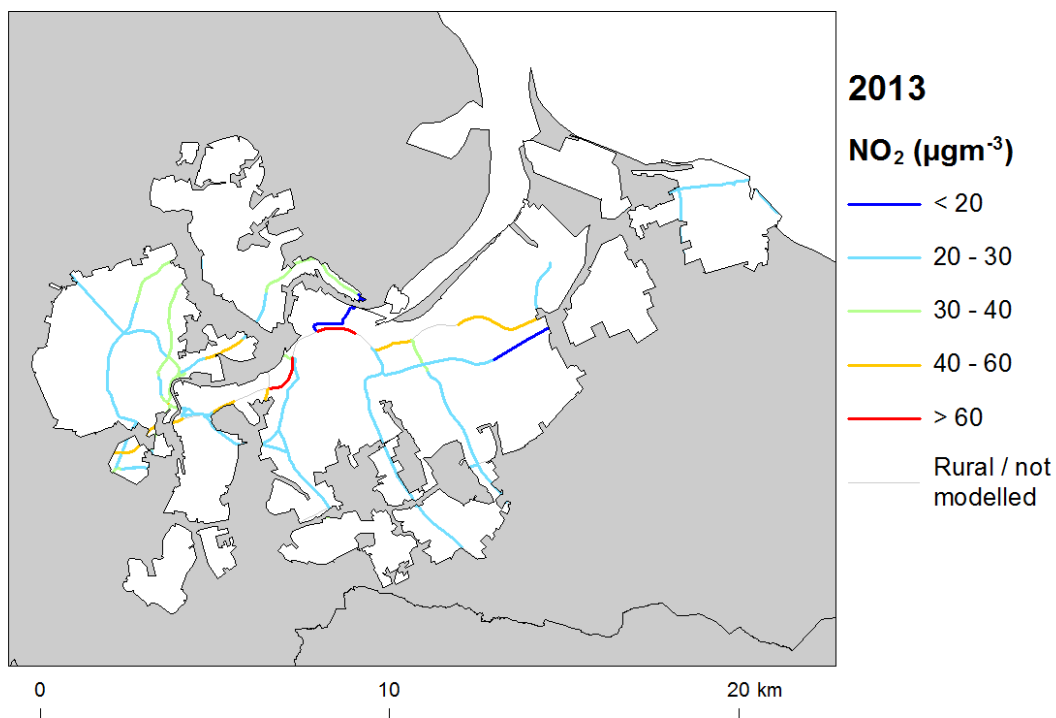
(a) Components are listed with NOx concentration of NA when there is no source from this sector.

Figure 4: Map of modelled background annual mean NO₂ concentrations 2013. Modelled exceedances of the annual limit value are shown in orange and red.



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Figure 5: Map of modelled roadside annual mean NO₂ concentrations 2013. Modelled exceedances of the annual limit value are shown in orange and red.



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4 Measures

4.1 Introduction

This section (section 4) gives details of measures that address exceedances of the NO₂ limit values within Teesside Urban Area agglomeration zone. This includes both measures that have already been taken and measures for which there is a firm commitment that they will be taken.

Section 5 then explains the extent to which it has been possible to incorporate the impacts of these measures into the baseline modelling carried out for this assessment.

4.2 Source apportionment

It is important to understand which sources are responsible for causing the exceedance in order to most effectively tailor measures to address the NO₂ exceedance situation described in section 3 above. This can be achieved by considering the source apportionment for the exceedance situation, also presented in section 3. A summary of what the source apportionment shows and the implications for which measures would therefore be appropriate is given here.

Local road traffic was the dominant source in this exceedance location in the reference year. The largest contribution was from cars at the location of maximum exceedance with a contribution of 52.8 μgm^{-3} of NO_x out of a total of 172.9 μgm^{-3} of NO_x. Cars, articulated HGVs, rigid HGVs and LGVs were important sources on the primary roads with the highest concentrations. Cars, articulated HGVs, rigid HGVs and LGVs were important sources on the trunk roads with the highest concentrations. For all road links concentrations of NO_x from diesel cars were approximately four times greater than NO_x emissions from petrol cars. NO_x concentrations from petrol LGVs are a small component of total NO_x concentrations and less than 2% of total NO_x from LGVs.

This indicates that appropriate measures should impact on local road traffic sources in this zone. Other measures may also be beneficial depending on the source apportionment for the urban background.

4.3 Measures

Measures potentially affecting NO₂ in this agglomeration zone have been taken and/or are planned at a range of administrative levels. These are:

- European Union
- National (i.e. England, Scotland, Wales, Northern Ireland or whole UK)
- Local (i.e. UK Local Authorities)

Details of European Union measures (e.g. euro standards, fuel quality directives, integrated pollution prevention and control) can be found on the European Commission's website (http://ec.europa.eu/environment/air/index_en.htm). Details of national measures are given in the UK overview document.

Relevant Local Authority measures within this exceedance situation are listed in Table C.1 (see Annex C). Table C.1 lists measures which a local authority has carried out or is in the process of carrying out, plus additional measures which the local authority is committed to carrying out or is investigating with the expectation of carrying out in the future.

Each local authority in the Teesside Urban Area agglomeration area has separate Local Transport Plans and its own specific plans from which common themes emerge in order to improve air quality. All recognise the need

to reduce emissions such as: increasing the modal share of active travel away from cars to public transport; implementing measures to support the growth of electric vehicles; and encouraging walking and cycling.

This includes, for example, in Middlesbrough, the installation of cycle paths and infrastructure along transport corridors to improve sustainable and carbon free journeys. These connect major trip generating locations to areas of housing, and to the rest of the network.

Businesses have also been provided the opportunity to establish their own fleet of pool bikes via Local Sustainable Transport Funding. To help widen the scope on the use of bikes, bike-ability training (Cycle proficiency for the 21st Century) has been offered to primary school children and this expected to last up to 2030. Free cycle parking schemes and promotional events have also been introduced.

So as to help reduce emissions from local authority fleet the purchasing of Euro VI vehicles has taken place as well as support for electric car uptake with on-site charging points. 20mph zones set up around the Borough to improve road safety, are also impacting on vehicle upon emissions.

Variable Messaging Signs are now located around Middlesbrough, highlighting delays on major carriageways to divert additional traffic which would increase standstill time, and the accumulation of pollution.

On public transport use a new rail station at James Cook University Hospital (a major trip generator) is helping provide alternatives to private car and improve connectivity. Work at Middlesbrough station is also improving accessibility as well as additional public works. The provision of a Town Rider bus service is linking Middlesbrough Town Centre with the Boroughs major industrial and employment zone and college, which previously had no public transport.

4.4 Measures timescales

Timescales for national measures are given in the UK overview document.

Local Authorities report on progress with the implementation of their action plans annually and review action plan measures regularly. Information on local measures was collected in February/March 2015. Hence, any Local Authority action plans and measures adopted by Local Authorities after this time have not been included in this air quality plan.

The reference year for this air quality plan is 2013. Hence where measures started and finished before 2013, then the improvement in air quality resulting from these measures will have already taken place before the reference year and the impact of these measures will have been included in the assessment where the measure has had an impact on the statistics used to compile the emission inventory. Many measures started before the reference year and will continue to have a beneficial impact on air quality well beyond the reference year. Hence measures with a start date before 2013 and an end date after 2013 may have an impact on concentrations in the reference year and a further impact in subsequent years. Where the Status column in Annex C is 'Implementation', this shows that this measure is already underway or that there is a commitment for this measure to go ahead. Where the Status is 'Planning', 'Preparation' or 'Other' the level of commitment is less clear and it is possible some of these measures may not go ahead.

5 Baseline Model projections

5.1 Overview of model projections

Model projections for 2020, 2025 and 2030, starting from the 2013 reference year described in section 3, have been calculated in order to determine when compliance with the NO₂ limit values is likely to be achieved on

the basis of EU, regional and local measures currently planned. Details of the methods used for the baseline emissions and projections modelling are provided in the UK technical report.

For national measures, it has not been possible to quantify the impact of all measures on emissions and ambient concentrations. The impact for all quantifiable measures has been included in the baseline projections.

The impacts of the individual Local Authority measures have not been explicitly included in the baseline model projections. However, measures may have been included implicitly if they have influenced the traffic counts for 2012 (used as a basis for the compilation of the emission inventory) or in the traffic activity projections to 2020 and beyond (used to calculate the emissions projections). It should be recognised that these measures will have a beneficial impact on air quality, even if it has not been possible to quantify this impact here.

5.2 Baseline projections: NO₂_UK0013_Annual_1

Table 4 presents summary results for the baseline model projections for 2020, 2025 and 2030 for the NO₂_UK0013_Annual_1 exceedance situation. This shows that the maximum modelled annual mean NO₂ concentration predicted for 2020 in this exceedance situation is 39 $\mu\text{g}\text{m}^{-3}$. Hence, the model results suggest that compliance with the NO₂ annual limit value is likely to be achieved before 2020 under baseline conditions in this exceedance situation.

Figures 6 and 7 show maps of projected annual mean NO₂ concentrations in 2020, 2025 and 2030 for background and roadside locations respectively. Maps for 2013 are also presented here for reference.

It should be noted that the baseline projections presented here include the impacts of some measures, where they can be quantified, that have already been or will be implemented.

Table 4: Annual mean NO₂ model results in NO₂_UK0013_Annual_1.

	2013	2020	2025	2030
Road length exceeding (km)	9.7	0.0	0.0	0.0
Background exceeding (km ²)	0	0	0	0
Maximum modelled concentration NO ₂ (μgm ⁻³) (a)	65	39	30	28
Corresponding modelled concentration NOx (μgm ⁻³) (b)	173	88	65	58

(a) Annual Mean Limit Value = 40 μgm⁻³

(b) NOx is recorded here for comparison with the NOx source apportionment graphs for 2013 presented in Annex B of this plan. Limit values for EU directive purposes are based on NO₂.

Figure 6: Background baseline projections of annual mean NO₂ concentrations in 2020, 2025 and 2030. 2013 is also included here for reference. Modelled exceedances of the annual limit value are shown in orange and red.

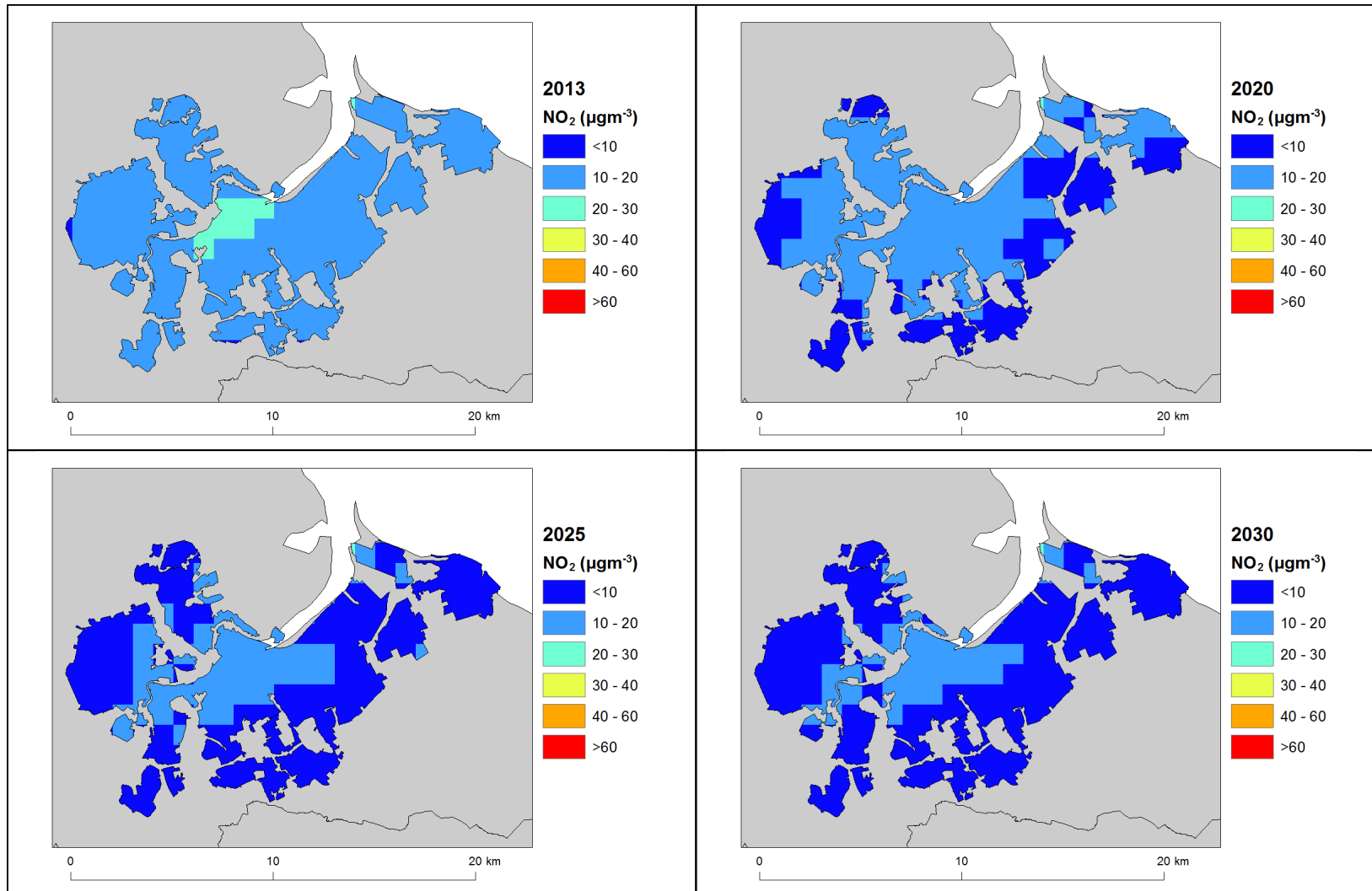
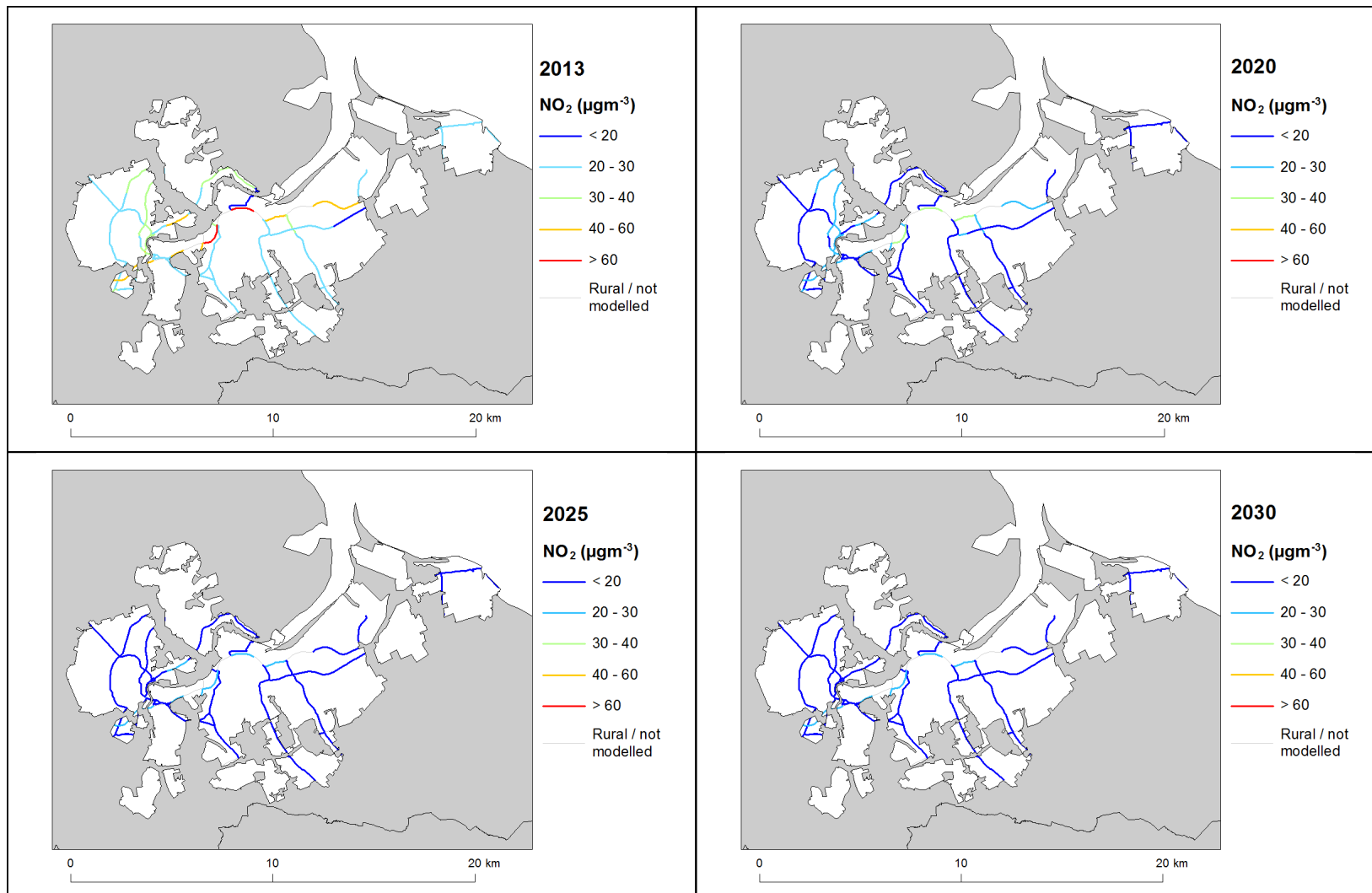


Figure 7: Roadside baseline projections of annual mean NO₂ concentrations in 2020, 2025 and 2030. 2013 is also included here for reference. Modelled exceedances of the annual limit value are shown in orange and red.



Annexes

A References

Air Quality Expert Group (AQEG, 2004). Nitrogen Dioxide in the United Kingdom. <http://uk-air.defra.gov.uk/library/aqeg/publications>

Decision 2004/224/EC. Commission Decision of 20 February 2004 laying down arrangements for the submission of information on plans or programmes required under Council Directive 96/62/EC in relation to limit values for certain pollutants in ambient air. From the Official Journal of the European Union, 6.3.2004, En series, L68/27

Decision 2004/461/EC. Commission Decision of 29 April 2004 laying down a questionnaire to be used for annual reporting on ambient air quality assessment under Council Directives 96/62/EC and 1999/30/EC and under Directives 2000/69/EC and 2002/3/EC of the European Parliament and of the Council. From the Official Journal of the European Union, 30.4.2004, En series, L156/78

Decision 2011/850/EU Commission Implementing Decision of 12 December 2011 laying down rules for Directives 2004/107/EC and 2008/50/EC of the European Parliament and of the Council as regards the reciprocal exchange of information and reporting on ambient air quality. From the Official Journal of the European Union, 17.12.2011, En series, L335/86

CDR Central Data Repository. <http://cdr.eionet.europa.eu/>

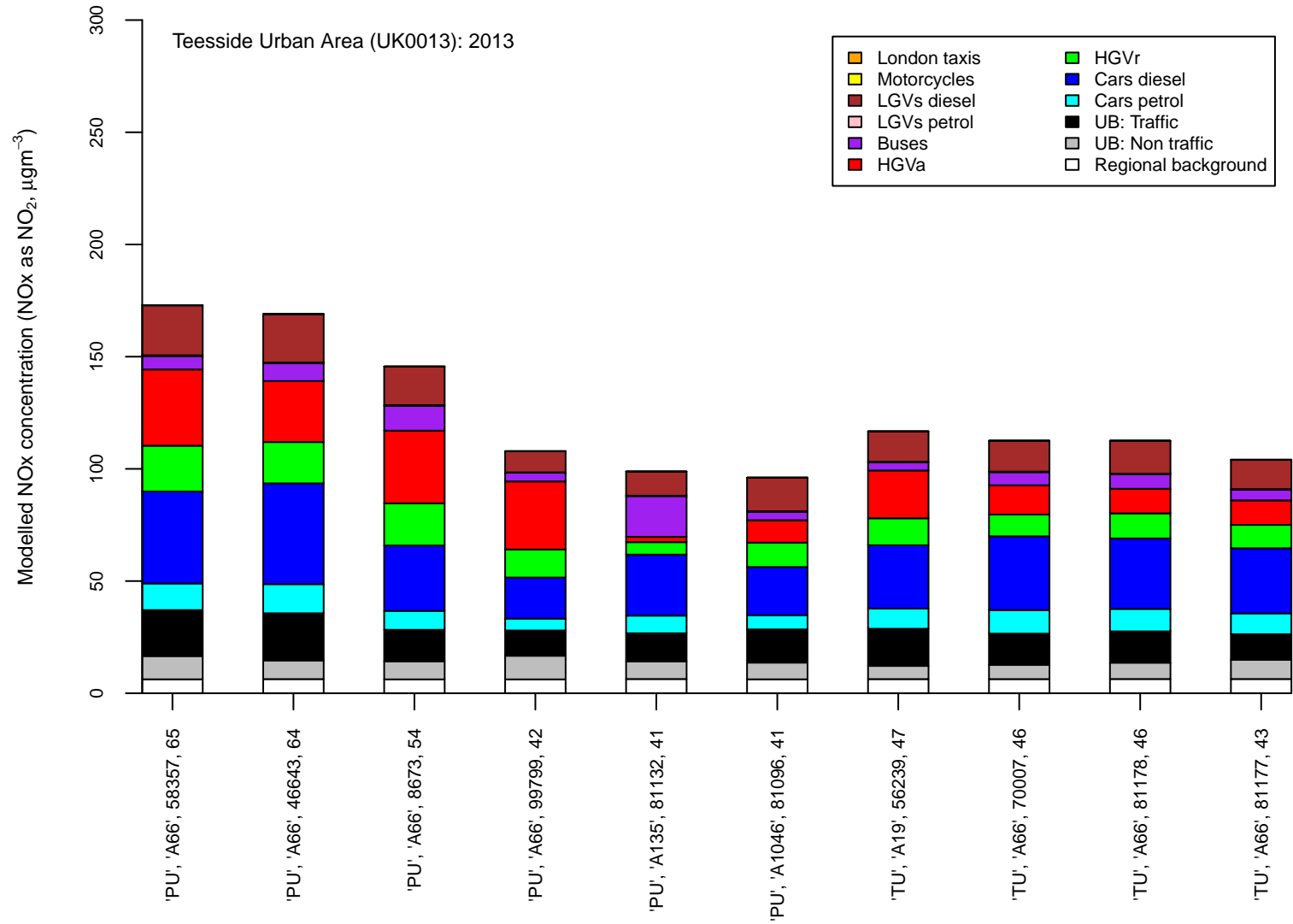
Air Quality Directive 2008/50/EC. Council Directive 2008/50/EC, of 21 May 2008. On ambient air quality and cleaner air for Europe. From the Official Journal of the European Union, 11.6.2008, En series, L152/1

1st Daughter Directive 1999/30/EC. Council Directive 1999/30/EC, of 22 April 1999 relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air (The First Daughter Directive). From the Official Journal of the European Communities, 29.6.1999, En Series, L163/41.

B Source apportionment graphs

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Figure B.1: Annual mean roadside NO_x source apportionment plots for all roads exceeding the annual mean NO₂ limit value in 2013.



Road class (MU = motorway, PU = primary road, TU = trunk road), road number, censusid 12 and modelled NO₂ concentration (µgm⁻³)

C Tables of measures

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Table C.1 Relevant Local Authority measures within Teesside Urban Area (UK0013)

Measure code	Description	Focus	Classification	Status	Other information
Redcar and Cleaveland Borough Council_1	Provision of cycle paths	Reduce emissions through the transport network	Traffic planning and management: Expansion of bicycle and pedestrian infrastructure	Implementation	Start date: 2012 Expected end date: 2015 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_2	Upgrading of cycle paths	Reduce emissions through the transport network	Traffic planning and management: Expansion of bicycle and pedestrian infrastructure	Implementation	Start date: 2012 Expected end date: 2015 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_3	Promotion of cycling facilities	Reduce emissions through the transport network	Traffic planning and management: Expansion of bicycle and pedestrian infrastructure	Implementation	Start date: 2012 Expected end date: 2015 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_4	Passenger facilities at railways	Reduce emissions through the transport network	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2013 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Other, please specify Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_5	Bus route improvements	Reduce emissions through the transport network	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2010 Expected end date: 2015 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_6	Events held in the Borough (400 to date)	Reduce emissions through the transport network	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2011 Expected end date: 2015 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_7	Promotion of cycling	Reduce emissions through the transport network	Traffic planning and management: Encouragement of shift of transport modes	Planning	Start date: 2015 Expected end date: 2016 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Redcar and Cleaveland Borough Council_8	Personalised Travel Planning	Reduce emissions through the transport network	Traffic planning and management: Encouragement of shift of transport modes	Planning	Start date: 2015 Expected end date: 2016 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_9	Highway Agency environmental investigation of Greystone Roundabout (A174) for future construction. Installation of 3 Nox tubes	N/A	Traffic planning and management: Other measure	Planning	Start date: 2014 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_10	Euro VI vehicles procurement: Public sector	Reduce emissions through the procurement process	Public procurement: New vehicles, including low emission vehicles	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_11	Euro VI vehicles procurement: Company vehicles	Reduce emissions through the procurement process	Public procurement: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_12	Tenderers are asked to provide sustainability details	Reduce emissions through the procurement process	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_13	Vehicle bidders submit narrative response of fuel efficiency during procurement process	Reduce emissions through the procurement process	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_14	Air pollution Nox tube partnership study with charity, Sustrans (Get Moving Redcar and Cleveland project)	Promote cycle uptake through the partnership	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2014 Expected end date: 2016 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Redcar and Cleaveland Borough Council_15	Buddy system to reduce vehicles	Promote car sharing	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_16	Vehicle Retrofitting programmes	Reduce emissions through the fleet management process	Retrofitting: Retrofitting emission control equipment to vehicles	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_17	Fleet efficiency and recognition schemes	Reduce emissions through the fleet management process	Other measure: Other measure	Implementation	Start date: 2015 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_18	Route Management Plans/ Strategic routing strategy for HGV's	Reduce emissions through the fleet management process	Traffic planning and management: Freight transport measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_19	Fleet management zero policy for idling	Reduce emissions through the fleet management process	Traffic planning and management: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_20	Lighter fleet vehicles limited to 62mph	Reduce emissions through the fleet management process	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_21	electric car uptake (2 bought by Council with on site charging points)	Reduce emissions through the fleet management process	Public procurement: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Redcar and Cleaveland Borough Council_22	Driver training and ECO driving aids	Reduce emissions through the fleet management process	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_23	School Capital Maintenance Programme- Number of boilers upgraded	Reduce emissions from old boilers across the Borough	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Other, please specify Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_24	Employee car salary sacrifice scheme	N/A	Public procurement: Other measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_25	Manage small waste oil burners	Manage emissions by identification of additional waste oil burners	Permit systems and economic instruments: Other measure	Other	Start date: 2015 Expected end date: 2015 Spatial scale: Whole agglomeration Source affected: Industry including heat and power production Indicator: How many are found or removed Target emissions reduction: N/A
Redcar and Cleaveland Borough Council_26	Taxi emission testing	N/A	Permit systems and economic instruments: Introduction/increase of environment taxes	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_1	Middlesbrough businesses have been provided the opportunity to establish their own fleet of pool bikes via Local Sustainable Transport Funding	To reduce vehicle use	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2012 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_2	Free, indoor secure cycle centre for town centre bike parking. Located in Middlesbrough bus station transport hub, the Cycle Centre offers showers, lockers and help and advice	To encourage cycling in the town	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2008 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Middlesbrough Borough Council_3	Bikeability (Cycle proficiency for the 21st Century) offered to primary school children	To encourage cycling in the town	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2006 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_4	Middlesbrough Bike Academy provides a wealth of cycle maintenance training to assist people cycling more frequently	To encourage cycling in the town	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2013 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_5	Child pedestrian training delivered across all primary schools. Walk leader co-ordinators deliver guided walks to groups.	To encourage alternatives to vehicle use	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2006 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_6	Installation of physical traffic calming initiatives to keep vehicle speeds low	To improve safety however the measure should also reduce exhaust emissions.	Traffic planning and management: Reduction of speed limits and control	Implementation	Start date: 2014 Expected end date: 2016 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_7	Electric pool vehicles are supported, with the installation of 11 free electric vehicle charging bays	To encourage the use of low emission vehicles	Other measure: Other measure	Implementation	Start date: 2010 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_8	Council Fleet Vehicle Procurement -Prioritising uptake of low emission vehicles – the intention to purchase Euro 6 specification vehicles as part of the ongoing fleet renewal programme	To reduce emissions	Public procurement: Other measure	Implementation	Start date: 2015 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_9	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging – the installation of an electric vehicle charging point at the Council's Depot facility.	To promote low emission vehicle use	Public procurement: Other measure	Implementation	Start date: 2011 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Middlesbrough Borough Council_10	Taxi licensing policy limits the age of a vehicle for a first time license to 3years old. The maximum age that a vehicle can be licensed as a taxi is 8 years old. Policy to be reviwed in 2015	To control the age of taxi vehicles which in turn encourages the use of newer vehicles producing less emissions in the fleet	Permit systems and economic instruments: Introduction/increase of environment taxes	Implementation	Start date: 2010 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_11	Variable Messaging Signs are used on the strategic network to alert drivers to traffic problems and assist in managing the traffic.	To Reduce traffic congestion	Traffic planning and management: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_12	20mph zones across entire Borough to improve safety, and subsequently reduce emissions through engine efficiency	To reduce emissions as a product of increased safety	Traffic planning and management: Reduction of speed limits and control	Implementation	Start date: 2012 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_13	Installation of strategic bus priority infrastructure to improve reliability and speed of journey	To improve bus efficiency and encourage use of the bus network	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2010 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_14	Work based travel plans available to any Middlesbrough based organisation. Picked up as part of planning conditions for large developments.	To reduce vehicle use	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2001 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_15	Home working is supported at Middlesbrough Council to remove the need for transport.	To reduce vehicle use	Other measure: Other measure	Implementation	Start date: 2008 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_16	Dedicated journey planning website across The Tees Valley is supported www.connectteesvalley.co.uk . Work with Job Centre to promote journey planning for unemployed people looking to get back in to work.	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2010 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Middlesbrough Borough Council_17	There is a 100% coverage of school travel plans in Middlesbrough, completed by 2010	To reduce vehicle use	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2009 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_18	Widespread promotion of cycling initiatives across the Borough through a range of medium	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2001 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_19	Widespread promotion of walking initiatives across the Borough through a range of medium	To reduce vehicle use	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2009 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_20	Ongoing work with operators to promote rail travel across the Borough	To reduce vehicle use	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2001 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_21	Ongoing work with operators to promote bus travel across the Borough	To reduce vehicle use	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2001 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_22	Websites are used to promote all sustainable transport information - www.connectteesvalley.com / www.middlesbrough.gov.uk / www.mencity.org.uk	To reduce vehicle use	Public information and Education: Internet	Implementation	Start date: 2008 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_23	A series of printed material available, supporting sustainable transport. This includes walking/cycling maps, guided route golders and public transport literature	To reduce vehicle use	Public information and Education: Leaflets	Implementation	Start date: 2001 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Middlesbrough Borough Council_24	Improvements to public transport hubs. Installation of new station at James Cook University Hospital to support passenger facilities.	To reduce vehicle use	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_25	Council adopted 10 year infrastructure plan for walking and cycling improvements	To reduce vehicle use	Traffic planning and management: Expansion of bicycle and pedestrian infrastructure	Implementation	Start date: 2012 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_26	Work to address pinchpoints on highway network undertaken to address bus route in-efficiency.	To improve bus efficiency and encourage use of the bus network	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2001 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_27	promotion of www.liftshare.com - publicly available car sharing website to reduce single occupancy car journeys	To reduce vehicle numbers	Other measure: Other measure	Implementation	Start date: 2008 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_1	UTMC	Linked traffic signal control to reduce congestion	Traffic planning and management: Other measure	Implementation	Start date: 2010 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_2	20mph zones in residential areas where practical	N/A	Traffic planning and management: Reduction of speed limits and control	Implementation	Start date: 2005 Expected end date: 2017 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_3	Core bus route road space re-prioritisation	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2010 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Stockton-on-Tees Borough Council_4	Focus on large employers and new developments	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2009 Expected end date: 2020 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_5	Partnership work with Sustrans to deliver ongoing active travel promotions to residents and businesses	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2009 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_6	PTP delivered to 8000 households in 2014	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2010 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_7	Cycling maps, guides, cycle training, guided rides etc	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2013 Expected end date: 2014 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_8	Walking maps and guided walks	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2006 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_9	Web pages focussing cycling	N/A	Public information and Education: Internet	Implementation	Start date: 2008 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_10	Web pages focussing walking	N/A	Public information and Education: Leaflets	Implementation	Start date: 2008 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Stockton-on-Tees Borough Council_11	New bus shelters at all town centre locations in the Borough, rail station improvements at all stations including signage, access improvements and new waiting facilities	N/A	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2009 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_12	Focus on access to town centres and routes to schools	N/A	Traffic planning and management: Expansion of bicycle and pedestrian infrastructure	Implementation	Start date: 2009 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_13	5 year Borough wide programme of infrastructure improvements to decrease bus journey times on core routes	N/A	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2010 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_14	Policy in place for sustainable procurement of services	N/A	Other measure: Other measure	Implementation	Start date: 2011 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_15	Policy in place for prioritisation of electric vehicles for Council pool vehicle use	N/A	Public procurement: Other measure	Implementation	Start date: 2011 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_16	Large network of EV charging posts across the borough, including a rapid charger in Stockton Town Centre	N/A	Public procurement: Other measure	Implementation	Start date: 2010 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_17	Free parking for EV's in charging bays	N/A	Traffic planning and management: Differentiation of parking fees	Implementation	Start date: 2011 Expected end date: 2018 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Stockton-on-Tees Borough Council_18	School Travel Plans - 10 years of work to ensure all schools have a travel plan and are actively working to reduce single occupancy vehicle journeys	N/A	Traffic planning and management: Other measure	Implementation	Start date: 2005 Expected end date: 2010 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_19	Cycle to work schemes	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2010 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_20	Discount bus and rail tickets for staff	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2007 Expected end date: 2013 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_21	Station improvements encompassing car park expansions, on site information, waiting facilities and security	N/A	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2010 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_22	District Heating Scheme	N/A	Low emission fuels for stationary and mobile sources: Other measure	Preparation	Start date: 2018 Expected end date: 2030 Spatial scale: Local Source affected: Industry including heat and power production Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_23	Fleet eco-driving training. Training fleet vehicle drivers to drive in an environmentally aware way	N/A	Other measure: Other measure	Implementation	Start date: 2009 Expected end date: 2012 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_24	existing taxis to meet Euro 3 standard , new taxis to meet Euro 4	N/A	Permit systems and economic instruments: Introduction/increase of environment taxes	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Stockton-on-Tees Borough Council_25	Promotion of home working for council staff	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2010 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_26	the 'Drivers Certificate of Professional Competence' the training includes modules that cover ECO driving.	N/A	Other measure: Other measure	Implementation	Start date: 2011 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_27	of purchasing vehicles that comply to the latest Euro 6 emissions legislation.	N/A	Other measure: Other measure	Implementation	Start date: 2015 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_28	route optimisation projects for refuse vehicles.	N/A	Other measure: Other measure	Implementation	Start date: 2012 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A